

STATE OF MISSOURI
FISCAL YEAR 2007
ANNUAL RECYCLING REPORT



Prepared By:
State of Missouri, Office of Administration

Acknowledgements

Published by the State of Missouri, Office of Administration, Division of Purchasing and Materials Management in consultation with the Department of Natural Resources' Solid Waste Management Program and the Environmental Improvement and Energy Resources Authority.

Special thanks to the Missouri Interagency Recycling Committee (MIRC), department recycling coordinators and purchasing staff who contributed to this report. The Missouri State Recycling Program also wants to thank all state employees for their ongoing efforts to reduce, reuse, recycle, and buy recycled-content products.

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January 2008

To the Members of the General Assembly of the State of Missouri,

In accordance with RSMo 34.031, the Office of Administration in consultation with the Department of Natural Resources is submitting the Fiscal Year 2007 (FY07) Annual Recycling Report to summarize state government's accomplishments in the areas of recycling, waste reduction, and recycled content procurement for the period of July 1, 2006 through June 30, 2007.

State law directs state agencies to implement policies for recycling, waste reduction, and procurement of recycled content products. The State Recycling Program, administered by the Office of Administration, Division of Purchasing and Materials Management, is responsible for assisting state agencies in these areas. The State Recycling Coordinator works cooperatively with the Missouri Interagency Recycling Committee (MIRC) to facilitate recycling and waste reduction by state employees.

The Office of Administration is pleased to report that FY07 was a record year in terms of the amount of revenues generated from the collection of recyclable materials. Revenues have steadily increased over the past four years and there was a 37% increase in proceeds from FY06 to FY07 (see chart on p. 19). State government recycling efforts continue to reduce that amount of waste generated at state facilities and the related costs of wasted disposal. On pages 11 – 15 of this year's report the achievements of several agencies in the area of recycling and waste reduction are summarized.

We appreciate the support of the General Assembly in our recycling efforts.

Sincerely,

A handwritten signature in dark ink, appearing to read "Michael N. Keathley", is written over a horizontal line.

Michael N. Keathley
Commissioner

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I. Missouri State Recycling Program Structure

What is the Missouri State Recycling Program?

The Missouri State Recycling Program (**MSRP**) was established in 1989 when legislation added sections 34.031 and 34.032 to Chapter 34 of the MO Revised Statutes. The purpose of the **MSRP** is to assist State of Missouri government agencies with:

- **Procurement** of products manufactured with recycled materials.
- Coordinating **waste reduction** strategies.
- Overseeing the **collection** of recyclables by establishing recycling services contracts.

Who is the MSRP?

There are three components to the **MSRP's** organizational chart.

The **state recycling coordinator** is dedicated to the planning and administration of recycling and waste reduction activities.

The **Missouri Interagency Recycling Committee** serves an important purpose by providing input on recycling initiatives and communicating with state employees about various recycling programs.

The efforts of **state employees** to recycle ensures the success of any recycling initiative. State employees that recycle are considered a part of the **MSRP**.



What is the Missouri Interagency Recycling Committee?

The Missouri Interagency Recycling Committee (**MIRC**) was established in 1994. It was recognized the **MSRP** needed a way to communicate procurement and recycling policies throughout state government. **MIRC** is a vital component of the **MSRP** and meets quarterly to discuss issues dealing with recycling collection, waste reduction, recycling market conditions and recycled product procurement.

Who is MIRC?

The Recycling Committee is composed of representatives from various state departments (executive, judicial, and legislative). To learn more about recycling in your department, please contact your **MIRC** member. A list of members is located on page 6.

Missouri Interagency Recycling Committee (MIRC) Members

Executive Departments	MIRC Member	Phone	Email
Office of Administration Div. of Purch. & Materials Mgmt. State Recycling Program HST, Room 630/P.O. Box 809 Jefferson City, MO 65102	Rob Didriksen State Recycling Coordinator	573.751.3384	Robert.Didriksen@oa.mo.gov
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	Marcus Monroe	573.751.3870	Marcus.A.Monroe@dss.mo.gov
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Office of the State Treasurer	Nancy Tennison	573.751.0912	Nancy.Tennison@treasurer.mo.gov
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Senate	Terry Spieler	573.751.3766	TSpieler@senate.mo.gov

II. FY07 Overview: Collection of Recyclables

Local Recycling Services Contracts

In FY07, the Missouri State Recycling Program (**MSRP**) provided contract administration for three local recycling services contracts. Areas covered by these contracts included Jefferson City, Kansas City, and Springfield. These contracts provided state agencies an option to recycle office paper and cardboard at no cost.

Jefferson City

The Jefferson City Recycling Services contract continued to perform very well in FY07. Three materials were covered by this contract — mixed office paper, cardboard (baled & loose), and aluminum. Collection amounts increased with two out of three of the materials covered by the contract. (see charts to the right) There was nearly an 8% increase in the amount of paper collected and a whopping 117% increase in the amount of cardboard recycled as compared to the previous fiscal year.

The biggest portion of the increase in cardboard recycled can be attributed to a more mature system for loose cardboard collection. At the end of FY06 twelve locations were added to the loose cardboard collection route bringing the total number of state locations on this route to thirty-one. It is conservatively estimated that state employees recycled 5,000 pounds of loose cardboard each week in FY07.

In addition the Missouri State Highway Patrol installed a baler at the beginning of FY07 and began having bales of cardboard picked up by the contractor.

Aluminum recycled in Jefferson City declined 33% from 3,336 pounds in FY06 to 2,247 pounds in FY07.

The contract provides for the State of Missouri to receive payment for mixed office paper, baled cardboard, and aluminum. The State does not receive payment for loose cardboard due to increased labor and transportation costs incurred by the contractor; however, loose cardboard collection is a service that does not cost the State.

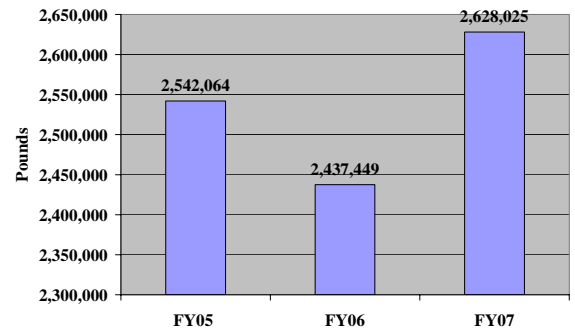
Kansas City

The Kansas City contract offered state agencies the option to recycle cardboard and mixed office paper at no cost. The amount of cardboard recycled in FY07 was nearly the same as in FY06. The amount of paper recycled dropped 17% from FY06 to FY07. (see charts to the right) Despite the stagnant and lower collection amounts, revenues from collection of these materials actually increased by 28% from \$2,378 (FY06) to \$3,033 (FY07) due to very strong markets for these commodities.

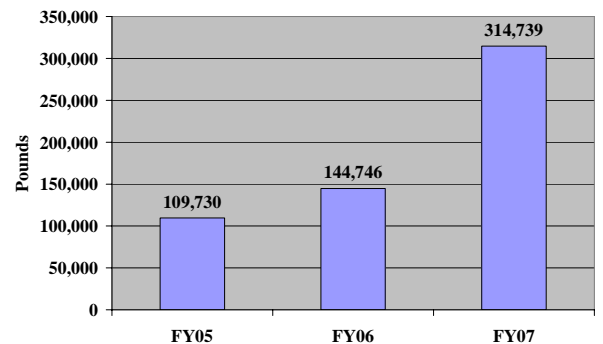
Springfield

A significant increase in the amount of cardboard recycled by state agencies in Springfield was realized in FY07. Paper recycled also increased. (see charts to the right) These increases can be attributed to improved reporting from the vendor. The Springfield Recycling Services contract expired in February, 2007. Although a contract for services was rebid there were no responses and agencies finished FY07 without an official contract.

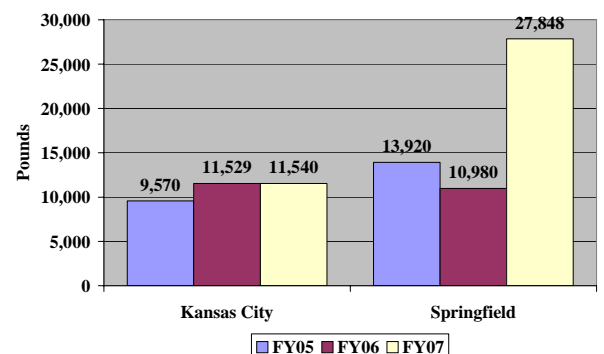
FY05-FY07 Paper Recycled: Jefferson City



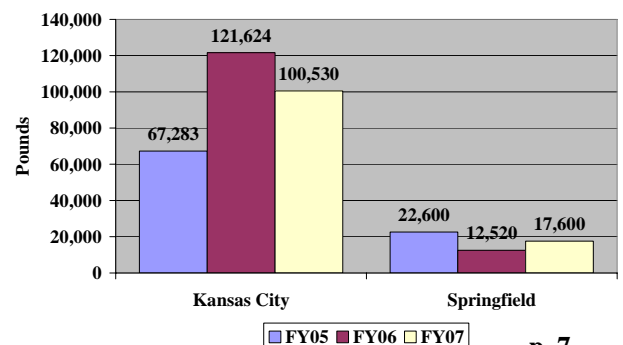
FY05-FY07 Cardboard Recycled: Jefferson City



FY05-FY07 Cardboard Recycled: Kansas City & Springfield



FY05-FY07 Mixed Office Paper Recycled: Kansas City & Springfield



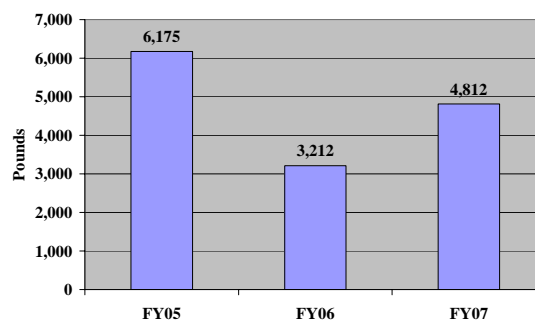
Statewide Recycling Services

The Missouri State Recycling Program (MSRP) coordinated two no-cost statewide recycling services for state agencies in FY07. These convenient services allowed state employees to recycle inkjet cartridges or rechargeable batteries from work or home. In addition, the Office of Administration's Division of Purchasing and Materials Management administered two fee-based services for document destruction and lamp recycling.

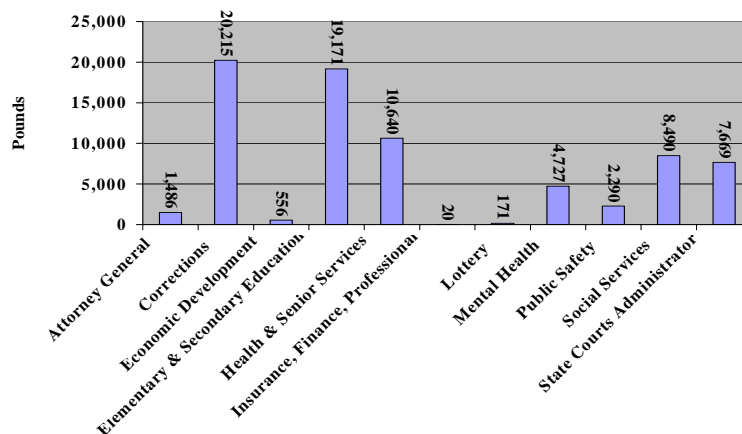
Rechargeable Battery Recycling

FY07 marked the third year that this service has been available to state agencies. Rechargeable batteries recycled increased from 3,212 pounds (FY06) to 4,812 pounds (FY07). Although the amount of batteries recycled in FY07 is well below the FY05 total—due to a backlog of batteries recycled in FY05, it is anticipated that there will not be much fluctuation in future years when compared to FY07. Ten locations were registered in FY07 bringing the total number of registered sites to seventy-eight.

FY05-FY07 Rechargeable Batteries Recycled Statewide



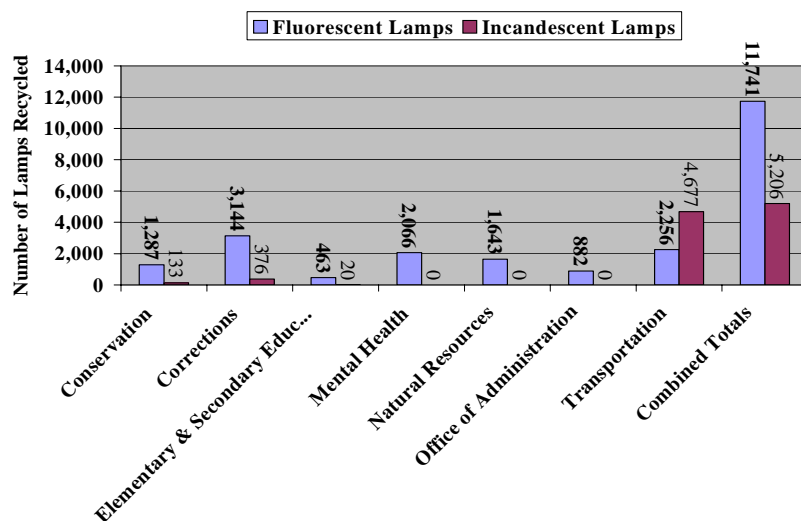
FY07 Agency Shred Amounts from Statewide Contract



Shredding & Records Disposal Contract

This contract provided state agencies throughout Missouri an opportunity to have confidential documents destroyed for a fee. Cost varied depending on volume to be destroyed and/or location of state agency. The chart to the right shows how many pounds were shredded by agencies utilizing this contract in FY07. Use of this contract by state agencies was not mandatory; therefore, information reported here only represents a portion of the state's overall volume of records shredded.

FY07 Agency Lamp Recycling Rates from Statewide Contract



Lamp & Ballast Recycling Contract

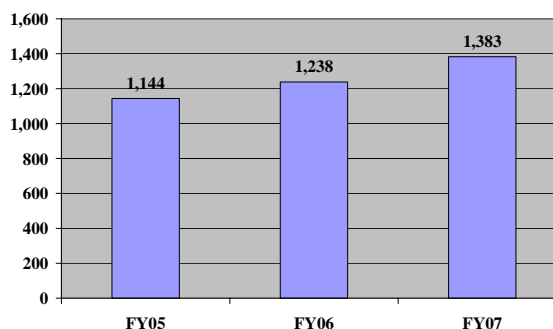
This contract provided a way for agencies to recycle both fluorescent and incandescent lighting as well as related lighting equipment (i.e., ballasts). Agencies were also able to recycle non-rechargeable batteries through this contract.

Fluorescent lamps tend to be recycled more frequently than incandescent lamps. This is due to the hazardous mercury vapors contained in fluorescent lighting.

Inkjet Cartridge Recycling

State agencies recycled 12% more inkjet cartridges in FY07 as compared to FY06. This increase is likely attributable to improved distribution of recycling supplies during the year. There was also a 45% increase in revenue from inkjet cartridge recycling — from \$611 (FY06) to \$885 (FY07).

FY05-FY07 Ink Jet Cartridges Recycled Statewide



FY07 Department Reports of Materials Recycled

Number of Pounds Recycled	Attorney General	Supreme Court	Agriculture	Conservation	Corrections	Economic Development	Elementary & Secondary Education	Health & Senior Services	Higher Education	Insurance	Labor & Industrial Relations	Mental Health	Natural Resources	Office of Administration	Public Safety	Revenue	Social Services	Transportation	Totals by Material
Aluminum		240	C	993	48,888	C	C	C	205	C	2,656	102	2,158	451	C	C	C	902,260 tons	57,940
Asphalt																		154	2,081
Ballasts				360										1,567					
Batteries-Non Recharge				86									30	10	1,333				1,459
Batteries-Recharge				12	263								38		359				3,717
Batteries-Lead Acid			750	30	3,650							525	289		1,324			87,500	95,835
Cardboard	C			9,155	1,574,058	C	C	C		C	C	51,500	12,542	12,300	4,600	C	C	7,200	2,025,482
Electronic Scrap													383		66,300				85,163
Food-Yard Waste			370,000		1,016,803								1,050		325				1,388,178
Glass				20									1,926						1,946
Magazines & Catalogs				1,800	40,000							1,225	1,396		500				44,921
Media, Storage													10	5,159	60		57		5,286
Mercury Devices																		43	43
Mixed Office Paper	1,486	C	C	20,126	221,564	556	19,171	10,640	C	20	C	19,631	31,244	C	14,290	710,691	8,490	C	3,804,064
Newsprint				1,760	51,584							860	2,067		250				56,521
Plastic				292	63,867								1,157	250					65,566
Rubber, Scrap Tires			2,400	283	36,690							645	114		169,570				209,702
Scrap Metal				9,480	86,599						218	35	25,928	1,427	216,970			250,000	590,657
Styrofoam				20					180				24						224
Telephone Books				675	30					160		2,163	363		820			5,600	9,811
Textiles					5,040								12						5,052
Tin / Steel Cans				12	609,158								295						609,465
Totals by Agency	1,486	240	373,150	45,104	3,758,194	556	19,171	10,640	385	180	2,874	76,686	81,026	21,164	476,701	710,691	8,547	350,497	

Note on Boxes with C's: A "C" in a box on this table indicates that an agency recycled the designated item by utilizing the Jefferson City recycling services contract.

Note on Totals by Material: In addition to agency reported figures, the following aggregate figures reported by contract and other centralized sources of data have been added to "totals by material".

Aluminum (JC contract)=2,247 lbs.; Cardboard (JC/KC/Spfld contract)=354,127 lbs.; Mixed Office Paper (JC/KC/Spfld contract)=2,746,155 lbs.; Electronic Scrap (State Surplus)=18,480 lbs.; Statewide Services: Rechargeable Batteries=3,045 lbs.; Lead-Acid Batteries=1,767 lbs. See additional explanation at top of p. 10.

Total Pounds Recycled in FY07	9,063,113
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FY07 Department Reports of Materials Recycled (cont.)

Contractual Reporting / Summary Information for Table on Page 9

Total pounds recycled by agencies utilizing the Jefferson City, Kansas City, and Springfield recycling services contracts is summarized in the table to the right. These figures are reported as cumulative totals due to contract reporting. Data is reported by building and it is not feasible to break out data by agency where there are multiple agencies in the same building.

FY07 Recycling Contract Totals

	Paper	Cardboard	Aluminum
Jefferson City	2,628,025	314,739	2,247
Kansas City	100,530	11,540	n/a
Springfield	17,600	27,848	n/a

Agencies that do not appear on the table on p. 9, but used a recycling service contract to recycle aluminum, cardboard, and mixed office paper include — **House of Representatives, Senate, Treasurer's Office, and the Secretary of State.**

Number of Items and Gallons Recycled Table

Number of Items Recycled	Books-Bound Publications	Cell Phones	Fluorescent Lamps	Incandescent Lamps	Inkjet & Toner Cartridges	Fuel/Oil Filters	Pallets	Tyvek Envelopes	Number of Gallons Recycled					
									Antifreeze	Diesel Fuel	Gasoline	Oil, Cooking	Oil, Motor	Paint/Solvent
Attorney General					63									
Supreme Court		32												
Auditor's Office					28									
Elementary & Secondary Education			463	20	41									
Agriculture					7	80						800	250	
Conservation			1,357	133	75	250	50	50	20				2,455	4
Corrections	431	37	4,444	376	1,719	239	52,197		50			21,066	2,060	
Economic Development					20									
Treasurer's Office					132									
Health & Senior Services					177									
Insurance					17									
Labor & Industrial Relations					975									
Mental Health			2,106		384		430					360	706	
Natural Resources	20	5	2,151		266	1	2	202					358	
Office of Administration			882		16		1,744							
Public Safety		22	1,884		456	20	670		10			780	245	30
Revenue					6									
Social Services					823									
Transportation			2,256	4,677	1,350	101	1,600		450	2,200	130		43,800	560
TOTALS	451	231	15,543	5,206	7,938	691	56,693	252	530	2,200	130	23,006	49,874	594

Note on Number of Ink Jet Cartridges and Cell Phones Recycled: 1,383 ink jet cartridges and 135 cell phones were recycled by employees using statewide services for these items. Vendor reporting for these items only provided cumulative figures. These figures have been added to the totals in the table above.

Missouri State Recycling Program Annual Awards

Each year the State Recycling Program accepts nominations for the Annual Recycling Award. Employees, departments, or agencies are eligible to be nominated for outstanding contributions made in the areas of recycling collection, waste reduction, and/or recycled content procurement. Members of the Missouri Interagency Recycling Committee review the nominations and then vote for an individual and/or an agency.

Awards are made based on accomplishments in the areas of recycling collection, waste reduction, and/or procurement of recycled-content products. The State Recycling Program encourages nominators to submit information that demonstrates the *value* of the nominee's recycling efforts. *Value* could include costs avoided, revenue generated, ongoing leadership/commitment/passion/enthusiasm, environmental benefits, etc.

FY06 Annual Recycling Awards

Individual Award: Leland Miller, Department of Corrections, South Central Correctional Center



The person that submitted the nomination for Mr. Miller said, "Mr. Miller has been a leader in institutional recycling. Through his efforts, SCCC has the lowest ratio of cost per offender in terms of disposal expenses of all MDOC institutions. Mr. Miller has also expanded recycling efforts into the local rural communities and actively promotes recycling at every opportunity.

Mr. Miller's leadership sets the best example for state employees to emulate and his program is the best of all state agencies."



Leland Miller

Agency Award: Missouri State Highway Patrol—Budget and Procurement

For the past several years staff at the MSHP warehouse have been making recycling simple and convenient for Highway Patrol employees throughout Missouri. Approximately three years ago an MSHP inquiry regarding recycling of rechargeable batteries led to a state-wide solution for all state agencies.

The warehouse has developed a system where supplies are not only distributed statewide from a central location in Jefferson City, but also

many items in the waste stream are returned to the warehouse to be recycled. MSHP Troops located throughout Missouri have the option to recycle office paper, cardboard, rechargeable batteries, ink jet cartridges, toner cartridges, and scrap metal. The MSHP realized that many of their supply trucks were returning to Jefferson City empty and it made sense to offer recycling services to Troops located in areas of the state where recycling services may not be accessible.

In FY06 the MSHP further demonstrated its commitment to recycling by purchasing a cardboard baler.



Darrell Taube Accepting the Award from Colonel James Keathley






FY07 Annual Recycling Award






Agency Award: Missouri Department of Transportation — Construction and Materials Division

In FY07 the State Recycling Program recognized the Missouri Department of Transportation's Construction and Materials Division for their exceptional efforts to recycle large amounts and varieties of materials into Missouri's highways.

The Missouri Department of Transportation (MoDOT) allows use of recovered materials in building and maintaining Missouri's highways. By allowing contractors to use reclaimed rubber from tires, cement kiln dust, asphalt millings, and asphalt shingles MoDOT helps keep these resources out of landfills and also supports markets for these materials. The total over the past four years amounts to the recycling of more than 1,840,684 tons (3.6 billion pounds!) of material that may have otherwise been classified as waste and may have ended up in a landfill.

Materials used in construction projects over the past four years include:

-  51,200 tons of fly ash
-  2,800 tons of cement kiln dust
-  51,600 tons of boiler slag
-  169,000 tons of steel slag
-  801,600 tons of mine chat

-  704,900 tons of recycled asphalt pavement
-  6,930 tons of shingles
-  654 tons of ground tire rubber
-  29,400 tons of hot in-place recycled asphalt
-  22,300 tons of cold in-place recycled asphalt

The 6930 tons of shingles is equivalent to 73,333 squares of shingles or the amount from 305 average homes. The 654 tons of ground tire rubber is equivalent to 83,000 car tires or the amount from 20,750 cars.

MoDOT has continued to allow increased use of recycled materials in highways. For example, in 2003 60,000 tons of recycled asphalt pavement were used in about 20 center lane miles of highway and by 2006 this amount had expanded that amount to 3,000,050 tons or about 1,020 center lane miles.

In addition, MoDOT cleans up over 80,000 passenger tire equivalent (over 600 tons) tires discarded on the state highways every year which is ground up and used as tire derived fuel in power plants, replacing coal used for electric power.



Governor Blunt and MoDOT Recycling Award Recipients

II. FY07 Overview: State Agency Waste Reduction / Recycling Accomplishments

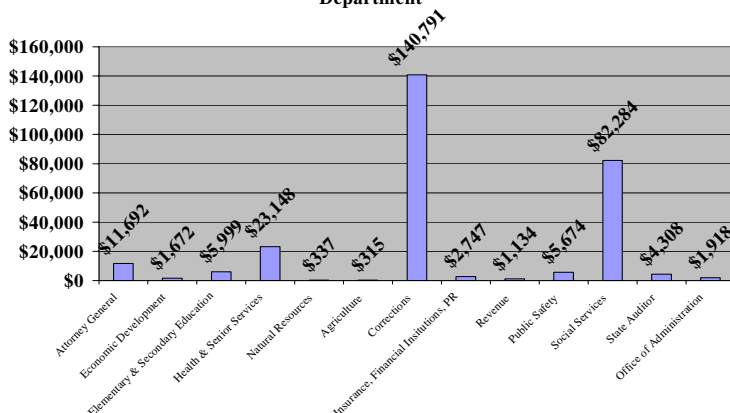
Remanufactured Toner Cartridges: State Agency Savings

For over 10 years Missouri Vocational Enterprises has offered a toner cartridge remanufacturing service for state agencies. This service has provided state agencies an opportunity to realize significant savings and reduce waste by reusing toner cartridges.

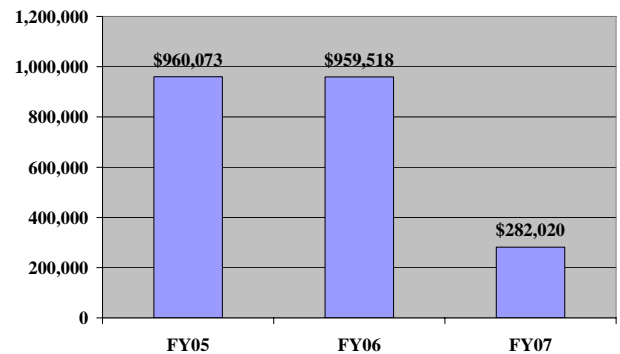
The chart below illustrates combined agency savings in FY07 of over a quarter million dollars. Savings is estimated by calculating the difference in price between MVE toner cartridges and non-recycled toner cartridges available from the office supplies contract.

From FY04 - FY07 state agencies saved nearly \$2.3 million dollars by utilizing MVE's toner cartridge remanufacturing service.

FY07 MVE Remanufactured Toner Cartridge Savings by Department



FY05-FY07 Savings on Remanufactured Toner Cartridges



2007 RecycleMania: Colleges & Universities Compete

RecycleMania is a competition among colleges and universities in the United States that provides schools with a fun, proactive opportunity to increase awareness about waste prevention and recycling on their campus. Over a 10-week period, schools compete in different contests to see which institution can collect the largest amount of recyclables per capita; the largest amount of total recyclables; the least amount of trash per capita; or have the highest recycling rate. Participating schools are required to report measurements on a weekly basis throughout the competition. The winning school of each competition receives a trophy such as the “Bowling Pin Guy Trophy”.



RecycleMania is supported by the U.S. Environmental Protection Agency’s Wastewise Program and the National Recycling Coalition, and is coordinated as a project of NRC’s College and University Recycling Council. The Coca-Cola Company is a major sponsor of RecycleMania.

In 2007 two-hundred colleges and universities competed in RecycleMania contests. Five schools in Missouri competed this year and the results of their efforts along with a description of each competition are provided in the tables below.

Targeted Material-Paper Standings: In this competition schools are competing to see which institution recycles the largest amount of paper per person.

National Rank out of 111 Schools	MO Rank	School Name	Cumulative Lbs Paper/Person
5	1	Truman State University	24.8
12	2	Missouri State University	21.95
18	3	Washington University in St. Louis	19.92
75	4	University of Missouri-Columbia	4.13

Targeted Material-Corrugated Cardboard Standings: In this competition schools are competing to see which institution recycles the largest amount of corrugated cardboard per person.

National Rank out of 104 Schools	MO Rank	School Name	Cumulative Lbs Corrugated Cardboard/Person
12	1	Truman State University	16.65
48	2	Missouri State University	6.74
75	3	University of Missouri-Columbia	3.07

Targeted Material-Bottles and Cans Standings: In this competition schools are competing to see which institution recycles the largest amount of bottles and cans per person.

National Rank Out of 112 Schools	MO Rank	School Name	Cumulative Lbs Bottles and Cans/Person
4	1	Truman State University	15.57
7	2	Missouri State University	11.74
68	3	Washington University in St. Louis	1.3
80	4	University of Missouri-Columbia	.68

2007 RecycleMania Standings (continued)

Grand Champion Standings: Schools participating in both the Per Capita Classic and the Waste Minimization competitions are eligible to become the Grand Champion of Recyclemania. The Grand Champion will be the school that, based on their combined results, demonstrates the greatest achievement in both source reduction and recycling.

National Rank out of 77 Schools	MO Rank	School Name	Cumulative Recycling Rate (%)
7	1	Northwest Missouri State University	46.25
73	2	University of Missouri-Columbia	9.89

Per Capita Classic Standings: In this competition schools are competing to see which institution collects the largest amount of acceptable recyclables per person.

National Rank out of 175 Schools	MO Rank	School Name	Cumulative Lbs Recyclables/Person
9	1	Truman State University	57.02
21	2	Missouri State University	40.43
27	3	Northwest Missouri State University	36.03
47	4	Washington University in St. Louis	26.76
133	5	University of Missouri-Columbia	7.68

Waste Minimization Standings: In this competition schools are competing to see which institution produces the least amount of municipal solid waste (including both recyclables and trash) per person.

National Rank out of 66 Schools	MO Rank	School Name	Cumulative Lbs Waste/Person
22	1	University of Missouri-Columbia	77.73
23	2	Northwest Missouri State University	77.91

Gorilla Prize Standings: In this competition schools are competing to see which institution collects the highest gross tonnage of recyclables, regardless of campus population.

National Rank out of 178 Schools	MO Rank	School Name	Cumulative Lbs Recyclables
18	1	Washington University in St. Louis	486,614
36	2	Truman State University	291,060
42	3	University of Missouri-Columbia	239,050
53	4	Northwest Missouri State University	210,291
62	5	Missouri State University	168,012

State Agency Recycling Efforts Avoid Cost of Waste Disposal

The efforts of agencies statewide resulted in a combined total of **4,532** tons (see chart on p. 9) of materials recycled in FY07. If this amount of material had been sent to landfills it is estimated the State of Missouri would have paid at least **\$163,922** in waste disposal costs. It is possible to calculate this cost avoidance based on the average tipping fee charged to waste haulers in Missouri. Tipping fees are paid by waste haulers for each ton of trash dumped in Missouri's landfills. The average tipping fee in Missouri in FY07 was \$36.17 per ton. The tipping fee is only one cost of doing business as a waste hauler. In addition to the tipping fee, a waste hauler includes labor and transportation costs in the actual amount charged to its customers. Therefore, utilizing the average tipping fee to calculate cost avoidance represents a conservative estimate. The actual cost avoidance realized by state agencies in FY07 would likely be significantly higher.

State Agenices Wash Out Waste—Saving \$500,000 Plus Annually

In FY07 the Office of Administration and Department of Corrections collaborated to introduce new technology in laundry services to save the state \$512,473 annually.

The new laundry system handles an average total of 26,950 pounds of laundry per day at the sites being converted. The new system replaced old, unreliable equipment that was taxing facilities' energy resources. It uses a highly reactive form of oxygen, many times more powerful than a disinfectant in water and faster in destroying viruses and bacteria. At Boonville Correctional Center, it cost \$52,919 to purchase and install new equipment, but the projected annual energy savings, \$94,218, more than covers the investment.

Other correctional institutions are also investing in the new technology:

- ♻️ Algoa Correctional Center: equipment costs \$93,055 - savings per year \$35,279
- ♻️ Southeast Correctional Center: equipment costs \$57,554 - savings per year \$29,414
- ♻️ South Central Correctional Center: equipment costs \$80,266 - savings per year \$46,687
- ♻️ Missouri Eastern Correctional Center: equipment costs \$36,110 - savings per year 23,912
- ♻️ Farmington Correctional Center: equipment costs \$236,456 - savings per year \$282,963

The new O-zone laundry system is also better for the environment. O-zone reacts better with organic compounds like dirt and bacteria, reducing the phosphates in waterways. Energy usage is lower with the new system because it works best with cold water and does not require as much water to complete the laundry process.

Department of Corrections and Department of Natural Resources Team Up on “Waste Tire to Energy Program”

An agreement made in 1995 between the Missouri Department of Corrections (DOC) and the Department of Natural Resources (DNR) has allowed DOC's Vocational Enterprises (MVE) program to operate a tire recycling plant at the Central Missouri Correctional Center (Church Farm) in Jefferson City.

DNR agreed to purchase the equipment for tire recycling provided MVE would operate the recycling equipment. Under the agreement prisoners are sent to clean up dump sites identified by DNR. The tires are taken by truck to Church Farm, where they are put through a grinding machine. Chips from the tires then go up a conveyer belt and ultimately to a truck. The material is then transported by tractor trailer to the University of Missouri-Columbia (UMC). UMC mixes tire-derived fuel (TDF) with coal and burns the mixture to generate electricity for the campus.

In FY07 9,868,000 pounds (4934 tons) of tires were recycled by MVE. While DNR is the Department of Corrections' main customer, MVE also works with the Missouri Department of Transportation (MoDOT), solid waste management districts, cities, counties, and other tax-supported entities. Since 1995, about 800,000 passenger tire equivalents (PTE's) have been picked up by MoDOT along highways and roads.




FY07 Overview: Recycled Content Procurement

Recycling Program Guidelines for Buying Recycled

The State Recycling Program works with agencies to increase procurement of products containing recycled content. This is commonly referred to as “closing the loop”. Recycling can only be successful if products produced from recyclable materials are then purchased. The State Recycling Program has adopted the Environmental Protection Agency’s (EPA) “**Comprehensive Procurement Guidelines (CPG)**” for recycled content products as a roadmap for the State of Missouri to continue working towards “closing the loop”.

Evaluation Criteria for Products Listed Under CPG:

- Availability of product
- Impact of procurement on the solid waste stream
- Economic and technological feasibility of producing the product
- Other uses of the recovered materials used to produce the product







There are 8 categories designated in the CPG. Product categories and individual items in these categories are listed below. **Products identified by the recycling symbol  also appear in the Missouri Recycled Products Directory** published by the Environmental Improvement and Resources Authority’s Market Development Program. This publication is a good resource for locating recycled products manufactured and distributed in Missouri. Additional information about this directory may be found in the “Recycling Resources” section on p. 21 of this report.

Product Fact Sheets may be found for each of these categories on the internet at the following address:




<http://www.epa.gov/epaoswer/non-hw/procure/factshts.htm>

Comprehensive Procurement Guidelines: Recycled Product Categories





1. Construction Products

-  **Building Insulation**
 - Carpet (polyester)
 - Carpet Cushion
 - Laminated Paperboard
-  **Cement & Concrete Containing**
 - **Coal fly ash**
 - Furnace slag
 - Ground granulated blast
 - Cenospheres
 - Silica fume
- Consolidated & Reprocessed Latex Paint
- Floor Tiles
- Flowable Fill
- Modular Threshold Ramps
- Nonpressure Pipe
-  **Patio Blocks**
 - Railroad Grade Crossing Surfaces
-  **Roofing Materials**
-  **Shower & Restroom Dividers/Partitions**
-  **Structural Fiberboard**




2. Landscaping Products

-  **Compost Made from Yard Trimmings or Food Waste**
 - Garden & Soaker Hoses
-  **Hydraulic Mulch**
 - Lawn & Garden Edging
-  **Plastic Lumber Landscaping Timbers & Posts**

3. Park & Recreation Products

-  **Park Benches & Picnic Tables**
-  **Plastic Fencing**
-  **Playground Equipment**
-  **Playground Surfaces**
 - Running Tracks

4. Paper Products

-  **Commercial/Industrial Sanitary Tissue (paper towels & toilet paper)**
 - Miscellaneous Papers
 - Newsprint
-  **Paperboard & Packaging Products**
-  **Printing & Writing Papers**

5. Nonpaper Office Products

-  **Binders, Clipboards, File Folders, Clip Portfolios, & Presentation Folders**
-  **Office Furniture**
-  **Office Recycling Containers**
-  **Office Waste Receptacles**
 - Plastic Desktop Accessories
 - Plastic Envelopes
 - Plastic Trashbags
-  **Printer Ribbons**
-  **Toner Cartridges**




6. Vehicular Products

- Engine Coolants
- Rebuilt Vehicular Parts
- Re-Refined Lubricating Oils
- Retread Tires

7. Transportation Products

- Channelizers
- Delineators
- Flexible Delineators
- Parking Stops
- Traffic Barricades
- Traffic Cones

8. Miscellaneous Products

-  **Awards & Plaques**
 - Bike Racks
 - Blasting Grit
 - Industrial Drums
 - Manual-Grade Strapping
-  **Mats**
-  **Pallets**
 - Signage
 - Sorbents






State Agencies Close the Loop with Paper Procurement

Paper is the most common recycled product purchased by state agencies. In 1990, RSMo 34.032 established attainment goals for state agencies to purchase certain percentages of products made from post-consumer recovered materials. One goal was that 60% of paper products purchased by the State of Missouri contain post-consumer materials by the year 2000. This goal was not met in FY07 as 45% of the overall paper purchased contained recycled content.

FY07 Purchases of Recycled Paper Compared to Virgin Paper						
Product Category	Recycled Paper Purchases	Total Category Purchases (Recycled + Virgin)	Recycled Paper Purchases as a % of Total Purchases in Product Category	Recycled Paper Purchases as a % of Total Purchases in Product Category		
	FY07	FY07	FY07	FY06	FY05	FY04
Fine Paper Products (office, copy, fax)	\$1,372,835	\$3,676,396	37%	57%	22%	70%
Course Paper Products (napkins, towels, tissues)	\$1,623,908	\$2,565,342	63%	96%	83%	94%
Forms (continuous & snap out)	\$251,635	\$420,581	60%	23%	43%	90%
Envelopes (Plain or Printed)	\$781,492	\$1,160,354	67%	87%	88%	97%
Printing by contractors (40% of total charge is attributable to paper - figures appearing in this row represent paper cost only)	\$452,436	\$2,077,270	22%	50%	35%	61%
Overall Totals	\$4,482,306	\$9,899,943	45%	62%	41%	74%

Environmental Benefits of Buying Recycled Paper

The State of MO spent \$1,372,835 on recycled "Fine Paper Products" in FY07. A majority of this paper is printer/copier paper made with 30% post-consumer recycled paper. Purchasing this type of recycled paper versus virgin paper translates into the following estimated savings:

-  **9,155 trees**
-  **2,670,412 gallons of water**
-  **22,889 lbs. of air pollution**
-  **1,564,098 kw/hours of electricity**
-  **5.34 billion Btu—enough energy to power 534 homes for a year!**

FY07 Department Reports for Recycled Content Product Procurement

Non-Paper Recycled Content Procurement (All Figures Reported in Dollars)	Attorney General	Auditor's Office	Treasurer's Office	Agriculture	Conservation	Corrections (MVE-Agency Purchases)	Economic Development	Elementary & Secondary Education	Health & Senior Services	Higher Education	Insurance	Labor & Industrial Relations	Mental Health	Natural Resources	Office of Administration	Public Safety	Revenue	Secretary of State	Social Services	Transportation	TOTALS
Ammunition-Lead & Brass						3,542															\$3,542
Antifreeze						48														2,400	\$2,448
Asphalt Products						522															\$522
Batteries-Rechargeable						28							1,458	250		358				15,000	\$17,094
Building-Construction						8,953 MVE 257,137															\$8,953
Cardboard Boxes			276											158	2,450	12,950					\$272,971
Glass Beads																				10,000,000	\$10,000,000
Ink & Toner Cartridges	4,844	3,834		523		136,968 MVE 597,469	1,607	3,345	17,234		1,805		20	1,730	1,357	5,024	410		97,026		\$275,727
Janitorial Supplies					2,700			11,714					6,205		1,008	11,098	220				\$630,414
Lumber, Plastic						500 MVE 1,158,322															\$500
Metal Products										4,732			1,179		4,166	4,188					\$1,172,587
Office Supplies	44,048		5,761	1,655	23,479	147,813	37,650	28,274	24,699	1,308	13,311	7,360	68,375	37,053	9,422	61,184	49,682	7,028	117,135	27,984	\$713,221
Promotional Items															275						\$275
Remanufactured Furniture						MVE 1,329,628															\$1,329,628
Re-refined Oil																				7,000	\$7,000
Signs, Refurbished Aluminum						424							153			800				3,000,000	\$3,001,377
Tires, Retread																				90,000	\$90,000
Vehicle Maintenance Supplies						18,966															\$18,966
Total Dollars Spent on Recycled-Content Products in FY07																					\$17,545,224

Note on MVE reported figures appearing in the Corrections column: Totals appearing under MVE for Cardboard Boxes, Janitorial Supplies(polybags), Metal Products, and Remanufactured Furniture represent cumulative agency purchases of these products. Each of these figures was adjusted to account for agencies that specifically reported purchases of these MVE products. For instance, the figure appearing under MVE for cardboard boxes is calculated by taking the MVE provided figure of \$270,521 minus agency reported figures. See p. 21 for additional information on recycled content products provided by MVE.

II. FY07 Overview: Missouri's State Recycling Fund

Missouri's State Recycling Fund was established by RSMo 34.032 which states that "Proceeds from the sale of recycled materials may be used to offset costs of the recycling program."

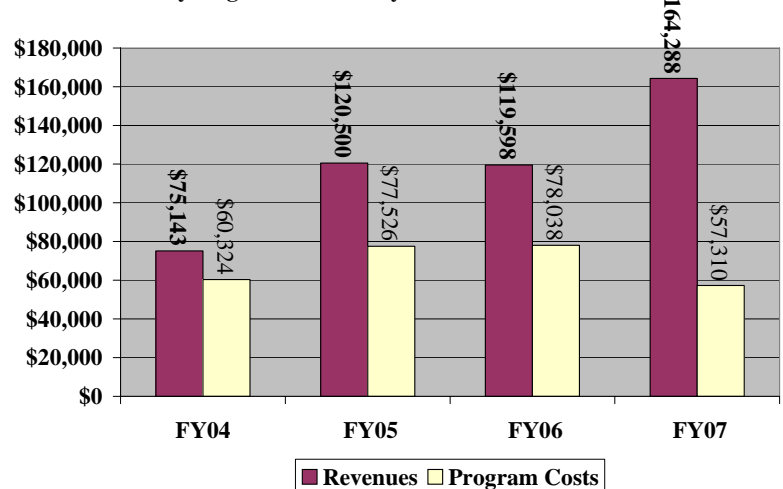
The chart to the right illustrates the significant financial growth due to state employee recycling efforts over the past four years. From FY06 to FY07 there was a 37% increase in revenues generated from recycling. Increased revenue has allowed the Missouri State Recycling Program (MSRP) to not only cover the costs of established programs, but also to purchase equipment for new recycling initiatives.

In FY07, the MSRP distributed nearly 2,000 plastic bags to state agencies. A majority of these were used to collect aluminum cans with a smaller percentage used for mixed office paper and plastic bottles. In addition, over 700 recycling containers were provided to state agencies in FY07. A majority of these are being used for mixed office paper and the balance of containers is used for aluminum can recycling. Other significant purchases made with monies from the State Recycling Fund included containers for the Department of Revenue's paper recycling program, baler supplies, and maintenance for one of the Department of Correction's in-vessel composters.

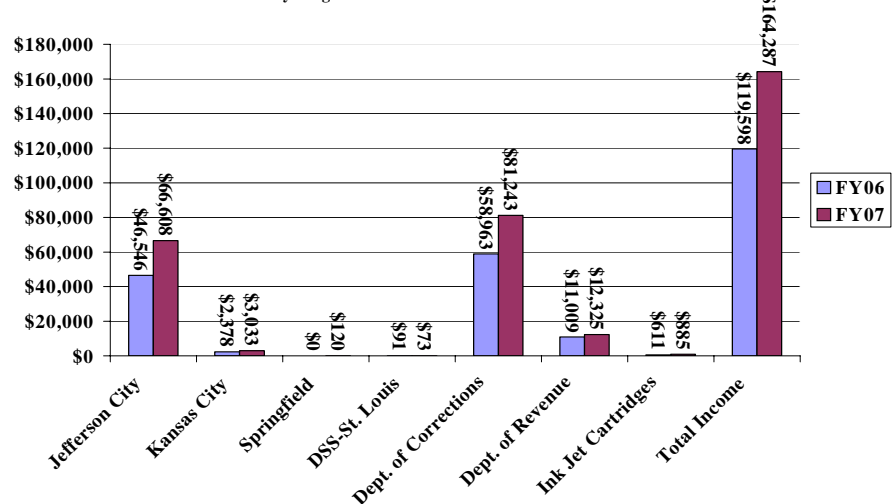
The top three sources of revenue in FY07 were the Department of Corrections (49%), Jefferson City recycling contract (41%), and Department of Revenue (8%). (see chart to right). The Department of Corrections (DOC) spends a significant

amount of recycling funds on consumable products such as plastic bags and baling wire for securing bales of recyclable materials. This is due to the high volume of materials that DOC generates and recycles.

Recycling Fund Summary: Fiscal Year 2004 - 2007



Recycling Fund Sources of Income: FY06 - FY07

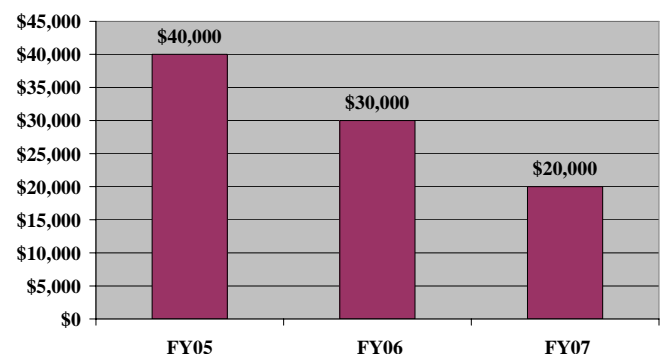


Contributions to the Heating Assistance Program (Utilicare)

Excess revenues from the sale of recyclable materials are transferred to the Heating Assistance Program managed by the Department of Social Services pursuant to RSMo 34.032. The Heating Assistance Program (HAP) - also known as Utilicare - provides financial assistance to low-income Missourians for heating their homes during winter months. The MSRP has transferred a total of **\$195,000** to the HAP since 1995.

As a result of state employee recycling efforts, the MSRP was able to make a **\$20,000** contribution to the HAP in FY07. The \$20,000 transferred to the HAP in FY07 will help approximately 100 households in Missouri to pay their heating bills.

Fiscal Year 2005 - 2007 Recycling Monies Transferred to the Heating Assistance Program



III. State Recycling Program Goals

FY07 Goals

Goal: Determine a practical methodology for collecting data for state agencies' recycled content procurement practices. Publish guidelines for gathering procurement data for state agencies to use when gathering information from the FY07 Annual Recycling Questionnaire (Fall, 2007).

Result: Tracking purchases of recycled content products falls into two broad categories — non-paper products and paper products.

Two sources of information were utilized to gather information in FY07 for non-paper purchases—state contractors and Missouri Vocational Enterprises (MVE). This resulted in agency specific data being obtained from the office supplies contractor and cumulative (all agency purchases combined) figures from MVE. In order to provide agency specific data on MVE recycled products in the future, new commodity/service codes were added in FY07 to the state's accounting system (SAM) for each of MVE's recycled products.



To obtain information about FY07 recycled paper purchases for each agency, the State of Missouri's data warehouse was queried. This report was customized to meet the needs of the State Recycling Program and it is anticipated that the report will be used in future reporting years.

Goal: Establish a recycling services contract for state agencies in the St. Louis area to recycle common office waste products such as paper and cardboard. Specific goals of the contract — no cost to state agencies, payment for recyclable materials, and at a minimum all buildings owned by the state and managed by the Office of Administration will be serviced by the recycling vendor.

Result:

A recycling services contract was not established in FY07 for state agencies in the St. Louis area. However, additional planning in regard to this contract was accomplished. A waste audit of the largest state building in St. Louis was performed during FY07. The waste audit has established baselines that will allow future recycling efforts to be measured. It was determined that additional information was necessary to proceed with the contracting process.

FY08 Goals

-  Increase the number of state buildings in Jefferson City that recycle beverage containers (aluminum cans, #1 plastic, and #2 plastic) by ten and the number of buildings that recycle cardboard by five.
-  Establish a recycling services contract for state agencies in the St. Louis area to recycle common office waste products such as paper and cardboard. Specific goals of the contract — no cost to state agencies, payment for recyclable materials, and at a minimum all buildings owned by the state and managed by the Office of Administration will be serviced by the recycling vendor.

IV. Recycling Resources

Missouri Department of Natural Resources Solid Waste Management Program

Internet: <http://www.dnr.mo.gov/env/swmp/index.html>

Email: swmp@dnr.mo.gov

Phone: **800-361-4827** or **573-751-5401**

The Solid Waste Management Program (SWMP) works with citizens, businesses, industry, and government to continue increasing material reuse and recycling. The SWMP web page is an excellent resource for information dealing with all aspects of solid waste management in Missouri.

Office of Administration Division of Purchasing & Materials Management Missouri State Recycling Program

Internet: <http://www.oa.mo.gov/purch/recypro.html>

Email: recycling@oa.mo.gov

Phone: **573-751-3384** or **573-751-2387**

The Missouri State Recycling Program (MSRP) works with state agencies to increase purchases of recycled content products, reduce their waste stream and increase collection of materials for recycling. The MSRP web page is a good resource for state contracts that offer recycled content products as well as recycling services.

Missouri Department of Natural Resources Environmental Improvement Energy Resources Authority / Market Development Program

Internet: <http://www.dnr.mo.gov/eiera/mo-market-dev-program.htm>

Email: eiera@dnr.mo.gov

Phone: **573-751-4919**

The **Missouri Recycled Products Directory** is published by the Market Development Program. An excellent resource for finding Missouri based businesses that manufacture or distribute recycled-content products. The directory is available online at <http://www.dnr.mo.gov/eiera/product-directory2006.pdf>

Missouri Department of Corrections Missouri Vocational Enterprises (MVE)

Internet: <http://www.doc.missouri.gov/mve>

Phone: **800-392-8486** or **573-751-6663**

The Department of Corrections vocational training program offers the following products and services that meet “buy recycled” criteria. MVE products and services are only available to state agencies and other tax-supported entities.

MVE Recycling/Remanufacturing/ Refurbishing Services

- Tire Recycling Service
573-635-3825
- Toner Cartridge Refill Service
573-751-3224 ext. 1260
- Office Panel (cubicle) Refurbishing Service
573-751-6663 or **800-392-8486**

MVE Recycled-Content Products

- Cardboard boxes: 60% post-consumer content
- Plastic bags: 30% recycled material
- Metal products: 25–35% post-consumer content
- Toilet paper: 100% recycled material
- Envelopes: 30% post-consumer content